# THE TECH

VOL. XXVIII. No. 49 BOSTON, MASS., FRIDAY, FEBRUARY 26, 1909 PRICE THREE CENTS

## LOWELL LECTURES ON SOLAR SYSTEM

### First of the Course of Six Talks Proves Very Interesting

### LARGE ATTENDANCE

#### Possibility of An Unseen Star Falling Into Sun Proves Interesting

"The Birth of a Solar System" the first of Prof. Percival Lowell's course of six lectures on Cosmic Physics or the Evolution of World's was given yesterday afternoon in Huntington Hall before a large audience.

Astronomy is usually regarded by the layman as a studies of bodies visible in the skies. Prof. Lowell, however, explained that a great part of the study is directed toward the dark or invisible bodies of space. All stars are suns, some of which greatly exceed our own sun in size. A telescope discloses millions more that are invisible to the naked eye. Yet these are only few in comparison to the myriads of stars which are close at hand peopling the space around us, but which except for rare circumstances remain unseen.

"All self-shining stars" Prof. Lowell said, "are continually giving out light and heat. This can not go on for ever. The stars finally grow dead unless some cosmic phenomena arises to again give them life. Such bodies exist all about us and in great multitudes."

All these dead stars are in motion and a proof of the fact is given from the peculiar action of Algol, the Demon, familiarly known as the winking star. This star has for years, at punctually recurring intervals of a few days, grown dim for a period of some twenty minutes, only to brighten again, like the winking of a huge demon eye. This loss of light is occasioned, Prof. Lowell says, by the passing around it in close orbit of a dark companion. Multitudes of these dark stars escape recognition. The only means by which they are discovered is by their possible contact with other stars causing heat and light.

The result of these collisions between the dark stars and other bodies in space is a spiral mass called Novae.

That there is a possibility of some such collision with the sun is a fact which Prof. Lowell explained at some length. Of the light stars no one of them could approach us for years. But with dark stars there is a difference. The only manner by which we could realize their approach would be by the reflection of the sun's light from their surface when they had approached close enough. The sun is travelling through space at a constant rate of eleven miles per second. The chances are that such a dark body would approach from the direction in which the sun is moving.

On the size of the stranger would depend the amount of time warning we should have of its approach. The bigger the star, the greater the reflection and consequently the more quickly would it be perceived. It is estimated that such a body could be discovered by astronomers when it is at a distance of 149 astronomical units from the earth, an astronomical unit being equivalent to the distance of the sun from the earth. Approximately nine and one half years later the stranger would be visible to the naked eye. About now it would begin to cause eccentricities in the orbits of the outer stars, and during the next three years it would steadily grow until it became recognized as a star of the first magnitude. Soon it would eclipse Venus in size, and would begin to cause a change in the length of the earth's years and seasons. In 145 days from this time the stars would begin to pass us. Our days and nights would be the only time intervals that we would recognize. The catastrophe would finally occur when this hitherto dark star would drop noiselessly into

(Continued on page 2.)

## DR. W. A. GUERTLER SPEAKS ON ALLOYS

### Instructive Talk Given To Chemical Engineers By Lecturer

### RECENT ACHIEVEMENTS

#### Modern Science Has Provided Well Defined Rules to Aid Investigation

"Metallic Alloys" was the subject of a particularly interesting talk delivered to the members of the Chemical Engineering Society by Dr. William A. Guertler at the Union, Thursday evening. Dr. Guertler came to the Institute from the University of Goettingen, Germany, where he held the position of Docent or private lecturer. In introducing him, President C. H. Pope 1909, of the Society, said that Dr. Guertler was well up on the subject of alloys and there was not much that anyone could "show him".

Dr. Guertler said that enormous progress had been made in the last century in the matter of metallic alloys. Modern industries would be impossible without the extensive use of alloyed matters. The successes achieved in this line, however, are not to be compared with the trouble and pains taken to accomplish the results.

The great fault with modern researchers, Dr. Guertler stated, is that they mix up a little bronze and steel and copper regardless and expect to get as a result a hard and firm metal. They are usually surprised that they do not find what they want and that they obtain a brittle, useless mass.

To give an idea of the numberless

(Continued on page 3.)

## COURSE VI. THESES

### Several of Seniors Have Completed Work

Among the theses of the Electricals this year are many subjects of timely importance and local interest, as well as several important and exhaustive tests. Most of the theses are now finished and the rest are in the last stages of completion. The complete list of the theses for Course VI is as follows:—

Adams, Burgher and Glancy-"Electric Equipment of a Shoe Factory;" Altamirano and Haynes-"Street Railway Test at East St. Louis;" Barnes and Spooner-"Power Plant Test;" Barnett and Schakne-"Self-Synchronizer;" Bettington-"Mine Hoisters;" Chase and Doane-"Tests of Insulating and other qualities of Various Insulating Materials;" Davis and Johnston-"Heat Insulators;" Dunnington and Whittaker-"The Feasibility of Electrifying the Boston and Albany Railroad between Springfield and Albany;" Everett-"The Feasibility of an Electric Light Plant for Five Towns including Georgetown, Rowley, etc.;" Finnie and Lange-"Gummon, a New Insulating Material;" Gibbs-"Theatre Lighting;" Gray and Jones-"Current Phenomena in Switching Transformers on Three-phase Circuits;" Green and Ruppert-"Power House for Boston and Albany Railroad Electrified between Springfield and Albany;" Jacoby-"Axle Drive for Train Lighting;" Jones, BH.-"Crane and Lyon Rectifier;" Kerr and Knipp-"Electrification of Baltimore and Ohio Railroad from Baltimore to Washington;" Loud and Stewart-"Examination of Blue Hill Street Railway;" Matte and Porosky-"Test of Reading Water and Light Plant;" O'Neil and Winterstein-"Electrification of a Portion of the Pennsylvania Railroad;" Pardee-"Relative Economy of Stranded and Solid Conductors for Electric Cable;" Rosenblatt and Smith-"Test of Power Plant in Schrafft's Candy Manufacturing Plant;" Witmer-"The Feasibility of Electrifying the Boston, Revere Beach and Lynn Railroad."

## TECHNOLOGY WINS FROM COLUMBIA

### Tech Fencers Win Meet By Brilliant Work Score 7-2

### KNOX INDIVIDUAL STAR

#### Capt. Dwyer Excels For Columbia Tech Team Fences Penn Tomorrow

In the meet with Columbia at the Gymnasium Wednesday evening the fencing team added another to its unbroken list of victories and established more firmly its reputation as one of the best aggregations with the foils ever turned out by the Institute. The meet was decisive, the home team scoring 69 touches against 19 for the visitors and winning seven out of the nine bouts.

Capt. Dwyer of Columbia won a well-earned victory from Grubnau. He also defeated Loring in the eighth bout in one of the closest matches of the evening. Ensign H. G. Knox 1910 was easily the best fencer on either of the teams. In all his previous matches this year

CAPT. V. C. GRUBNAU

he has shown himself impregnable to all attacks.

The second bout was the fastest and most interesting of the evening. This bout brought together the two best fencers, Knox and Dwyer. At the beginning of the bout Dwyer was the most aggressive but Knox perceiving that fine defensive work would not win from his opponent, became the attacking party and in the latter part of the engagement saw the Columbia man completely at his mercy.

Capt. Dwyer of Columbia did the best work for the visitors, showing fine form on the defensive. He showed up well against Knox. Loring and Grubnau also did good work.

From the showing made against Columbia and comparing the scores of Columbia with Pennsylvania and Yale, chances seem favorable for victory for the Tech team at Philadelphia tomorrow and over Harvard and Yale at the intercollegiate preliminaries a week from tomorrow in our Gym.

Bout 1.—Loring, T; defeated Duncan, C.; 8-4. Bout 2.—Knox, T.; defeated Dwyer, C.; 8-4. Bout 3.—Grubnau, T.; defeated Pitt, C.; 6-3. Bout 4.—Knox, T.; defeated Duncan, C.; 10-1. Bout 5.—Dwyer, T.; defeated Grubnau, T.; 11-2. Bout 6.—Loring, T.; defeated Pitt, C.; 9. Bout 7.—Grubnau, T.; defeated Duncan, C.; 10-4. Bout 8.—Dwyer, C.; defeated Loring, T.; 8-6. Bout 9.—Knox, T.; defeated Pitt, C.; 10-5

Referee: H. S. Breckenbridge, Harvard. Judges: W. Kilpatrick, and C. C. Emerson, of the Fenway Fencing Club. Timer: F. J. Lange 1909. Time 2m. bouts.

## LECTURE ON HYDRO ELECTRIC PLANTS

### Mechanical Engineers Hear Interesting Talk on Hydraulics

### COBURN THE SPEAKER

#### Discussion of Geological Survey And High Power Turbines Illustrated

At the Mechanical Engineering Society meeting yesterday evening, Mr. Howland L. Coburn, M. I. T., 1898, gave an interesting talk on the "Hydro Electric Field."

Mr. Coburn said in part: "I was invited some 10 days ago to give a talk before this society. The subject was not specified, and I have not chosen one. I usually find that when I use notes for a speech that at the end of ten minutes I have departed from them completely. I intend to give a talk illustrated with lantern slides, and to ramble over the hydraulic field and say anything that comes in my mind. Many of you may get into an establishment which has to do with hydraulic power. There is no field that fools a man more easily than the power in a river. High head and steep fall do not mean anything, and no faith can be placed in the words of the "oldest inhabitant."

Mr. Coburn then went on to enumerate examples of power plants unsuccessful because of scarcity of water due to inaccurate data. For the last fifteen years the U. S. Geological Survey has daily measured the stream flow in important streams, especially those on which stations have been established. The tables are given in depth in feet by guage, and it is necessary to use rating tables to transform this into feet per second. It is imperative to use rating tables. Men should not be too conservative or too adventurous. Streams vary from one hundred to two hundred times the amount of their discharge between low and high water.

Some of the difficulties incidental to dam building, and consequent land flooding, were touched upon. One plant in New England having been built for an insufficient flood, had to pay more damages at the end of the first year than the plant. Next a good deal of data concerning improvements on the Suhsquehanna River was given. Many lantern slides of power stations were shown and fully discussed. Various forms of waterwheels were described, with the advantages of each kind, also the various typical methods for installing them.

The announcement concerning the annual banquet of Course II was given out. It will be at the American House, Monday, 9th, at 7.30 P. M. The speakers will be: Walter B. Snow, M. I. T., 1882; Prof. Gaetano Lanza, Prof. Harrison W. Hayward, and Prof. Edward F. Miller.

---

Wednesday evening a number of the graduates of the class of 1904 residing in or around Boston held an informal reunion in one of the small dining rooms of the Union. The evening was brought to a close by enthusiastic singing of Tech songs.

## CALENDAR

FRIDAY, FEB. 26.

8 P. M. Chess—Tech vs. Brown.
8 P. M. Union Night—Dr. Sedgwick.

SATURDAY, FEB. 27.

3 P. M. Class—Cross Country at Gym.
8 P. M. Society of Arts—"Gas Powers."
8 P. M. Fencing—Tech vs. Penn at Phila.
8 P. M. Basket Ball—Tech vs. Rh de Island.

# THE TECH

Published every Monday, Wednesday, and Friday during the college year by students of the Massachusetts Institute of Technology.

Entered as second-class matter October 6, 1904, at the post office at Boston, Mass., under the Act. of Congress of March 3, 1879.

*Editorial Staff.*

H. I. PEARL 1910 — *Editor-in-Chief*
R. H. RANGER 1911 — *Managing Editor*
W. D. GREEN 1909
W. H. HILDEBRAND 1911 — H. M. DAVIS 1911

*Associate Editors*

O. B. DENISON 1911 — V. GUILLOU 1912

*News Staff.*

D. R. STEVENS 1911 — C. E. GREEN 1910
C. L. TULLER 1912 — J. I. MURRAY 1912
W. J. SELIGMAN 1911 — E. B. MOORE 1912

*Business Staff.*

G. B. FORRISTALL 1911 — *Business Manager*
N. DEFOREST 1911 — *Asst. Business Manager*
W. O. WHITNEY 1911 — D. N. FRAZIER 1911
S. C. NEFF 1912

*All communications regarding advertisements should be addressed to the Business Manager. Regarding subscriptions address the Asst. Business Manager.*

Subscriptions within the Boston Postal District and outside of United States must be accompanied by postage at the rate of one cent for each copy.

Subscription - - - $1.50 per year in advance.
Single Copies 3 Cents.

Printed by Old Colony Press, Boston.

Friday, February 26, 1909.


The Tech believes the following letter by Prof. C. E. A. Winslow of the biological department appearing in Science of February 19, to be worthy the attention of all Tech men:

"To the Editor of Science: I note in Science of January 29 a quotation from a Boston newspaper in regard to "Harvard University and the Massachusetts Institute of Technology"; and it seems desirable that certain erroneous impressions conveyed therein should be corrected.

"The important misconception in the article in question is implied in the statement: "It seems probable that the taking from the Instituute by Harvard of two of its leading professors will bring up again the question of a consolidation or an alliance between these two educational institutions." This is not only not probable; it is entirely unthinkable, to those acquainted with the true situation. The opposition of the faculty and alumni of the Instituute to this plan is founded on good and substantial reasons, which are too generally understood and respected to be questioned again.

"The Technology faculty and alumni did not oppose the proposed alliance from mere pride in the achievements of the institute, or from any narrow fear that it would lose its individual reputation. They simply recognized that Harvard and Technology represent different and incompatible educational ideals. Harvard's ideal is that of graduate scientific school following a college course based on the elective system. This, so far as engineering goes, is an interesting and promising experiment and one to which Technology can cheerfully contribute two of her honored sons. Technology herself, however, stands for a different ideal, for a combination, from the beginning, of a broad scientific training with the elements of liberal culture, in a four years' course, laid along the lines of a carefully balanced group system of studies. This ideal has not been fully realized; few ideals ever are; yet the influux of doubt and questioning which seems to have engulfed the world of higher education, the record of what the Institute has actually accomplished stands out as one of the clear and positive achievements of the last half century.

"I almost apologize for calling attention to another sentence in the quotation: "The Institute, on the other hand, is handicapped by an improper location and insufficient funds to compete successfully against Harvard."

"The readers of Science ought to be assured that while Technology needs, and would gladly receive gifts for its growing work, it has so far been able to make both ends meet without serious difficulty. The new President, Professor Maclaurin, experienced in education on three continents, comes to the Institute with complete enthusiasm for its special ideals. A body of eight thousand alumni and past students stand ready for loyal service. The Institute is now contemplating a move from its present location, which it will soon outgrow, to a new and ample one where a group of buildings worthy of its dignity will be erected. "The Old Technology, with its old traditions and its old ideals, new built on a new site," as acting President Noyes recently phrased it, will not "compete against Harvard"; but it will welcome the McKay school of applied science as a worthy ally in the great war against ignorance that we are all waging together."

C. E. A. WINSLOW

"Tech men waste too much time studying." It sounds well in theory, but—it don't work out in practice.

## LITCHFIELD ON TRIP

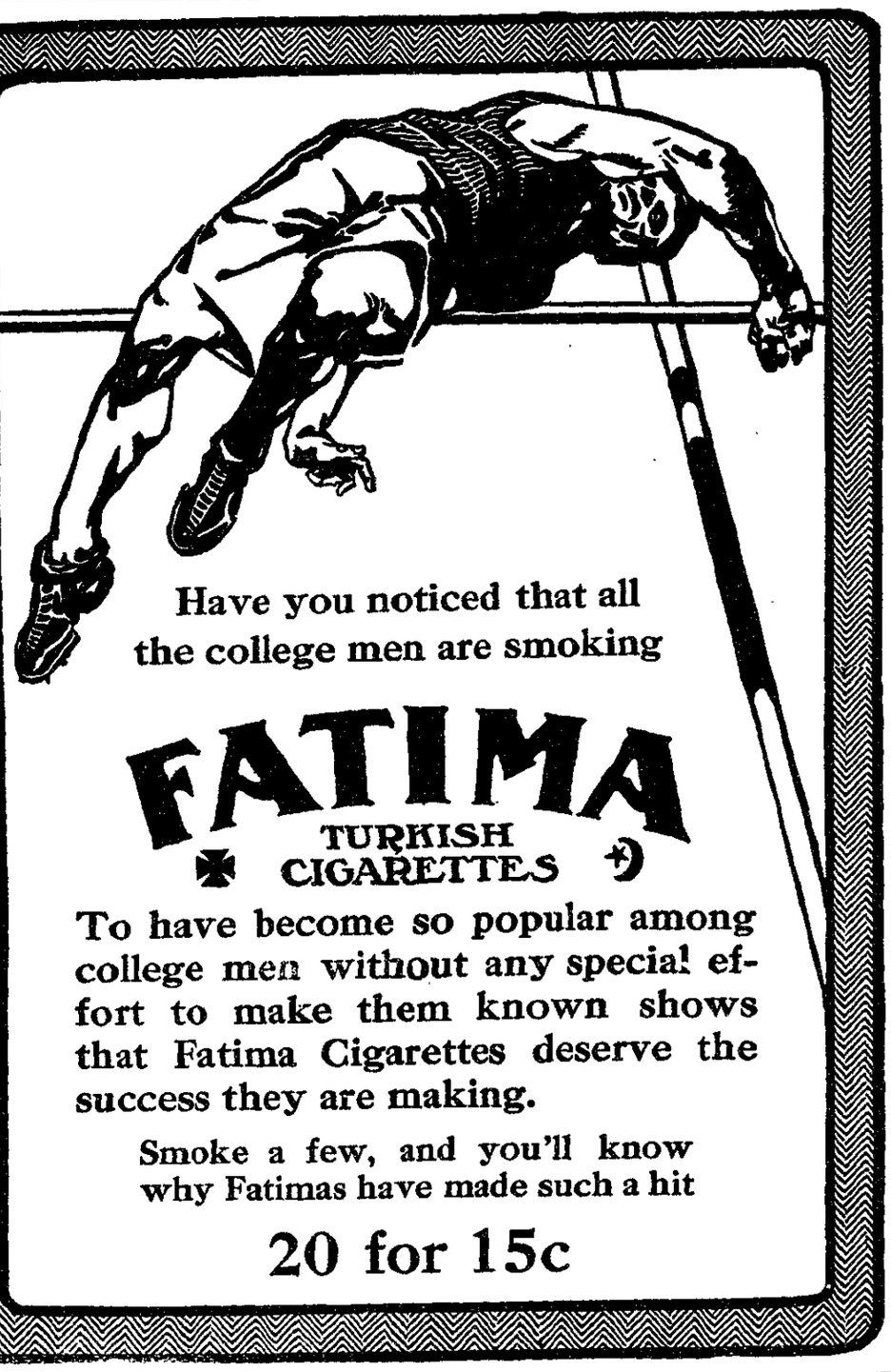
I. W. Litchfield 1885, editor of the Technology Review, has been making an extended trip throuugh the middle west attending the several alumni meetings recently held. Mr. Litchfield spoke at meetings of the Pittsburg, Washington, Chicago and Detroit alumni. He will return to Boston on Monday.

## LOWELL LECTURES

(Continued from page 1.)

the sun. Meanwhile we should have lived through a period as of madness and this climax would come as a merciful deliverance to us. After this event the sun would be removed to an indefinite distance and the earth would continue to rotate around the new star instead of the sun as formerly.

An event of this kind, though mathematically possible, Prof. Lowell remarked would happen only as rarely as to cause us small worry for some time to come.



Have you noticed that all the college men are smoking
FATIMA
TURKISH CIGARETTES
To have become so popular among college men without any special effort to make them known shows that Fatima Cigarettes deserve the success they are making.
Smoke a few, and you'll know why Fatimas have made such a hit
20 for 15c

Thos. F. Galvin
Florist
124 Tremont Street
Boylston and Fairfield Streets

GLOVES
Ask for the best and see how quick they'll bring you
FOWNES

To TECH Students
MISS M. F. FISK
THE RED GLOVE SHOP
322 Boylston St., opp. Arlington
Has an unusual good quality of Gray Mocha Gloves and a Tan Capeleather Glove
AT $1.50 A PAIR

C. F. HOVEY & CO.
Call attention to their Complete Line of
Men's Furnishing Goods.
CUSTOM MADE SHIRTS A SPECIALTY.
33 SUMMER ST , - BOSTON.

THE PERFECT PIPE TOBACCO
OUR PRIVATE MIXTURE
MANUFACTURED BY
COBB, BATES & YERXA CO.
BOSTON, U.S.A.
Why is it perfect? BECAUSE it is mild, fragrant, slow burning and does not bite the tongue.
PACKED IN 4 OZ., 8 OZ. AND 16 OZ. TINS

A College Retreat
Mathematicians, Scientists, Researchers, Chemists, Architects, Free Hand Artists, Mining, Civil, Mechanical, Electrical Engineers, Bachteriologists, etc., etc.
GENTLEMEN LOOK OUT FOR YOUR HEALTH.
You need a safety valve!: A brain storm or a brain explosion is liable to occur at any time. You will find the needed relaxation, and relief at the
HOTEL EPICURE
In the vineyard, the genuine Bohemian Cafe with orchestra, grand opera and popular song soloists, with a stein of good beer, or a cold bottle and a square meal, where you will forget all about science and enjoy yourself for a while on earth, as a human being.
HOTEL EPICURE, the only typical French Hotel in Boston
27-33 HAYWARD PLACE
*The Little Corner* — HENRI E. GENOUD, *Manager*

HOW MANY RECORDS WERE MADE
AT THE INDOOR MEET?
DO YOU KNOW? DID YOU EVER KNOW?
THE TECH PRINTS COMPLETE ACCOUNTS OF ALL TECH EVENTS
$1.50 A YEAR

The Copley Florist
N. Fishelson
14 and 18 Huntington Avenue, Boston
Pierce Building
Floral Designs for all Occasions
Tel. 21671 Back Bay
DISCOUNT TO TECH MEN

Tech Drug Store
Chemicals, Reagents and Acids
AT SPECIAL PRICES
Sachets, Perfumes, Toilet Articles
New Tech Seal Cigarettes
All Popular Brands of Cigars

T. METCALF CO.
COPLEY SQUARE
39 TREMONT STREET

A. Stowell & Co.
24 Winter St.
Jewellers and Importers of Novelties

GENTLEMEN
WHO DRESS FOR STYLE NEATNESS, AND COMFORT WEAR THE IMPROVED
BOSTON GARTER
THE RECOGNIZED STANDARD
The Name is stamped on every loop—
The Velvet Grip CUSHION BUTTON CLASP
LIES FLAT TO THE LEG—NEVER SLIPS, TEARS NOR UNFASTENS
Sample pair, Silk 50c., Cotton 25c. Mailed on receipt of price.
GEO. FROST CO., Makers
Boston, Mass., U.S.A.
ALWAYS EASY

## COMMUNICATION

At the big five year re-union in June, the alumni wish to make the singing of Tech songs an important feature of every event. In order to make this a suuccess some practical leadership is essential, and as the scattered alumni have no opportunity for securing this practise, they will depend to a great extent on the undergraduates for such leadership. A slight effort on the part of any considerable number of fellows would furnish a nucleus on which could be built a chorus as large as desired, and yet there seem but few who are willing to make even this slight effort.

Dr. Underhill, a class-mate of the immortal Bullard, and an enthusiastic and accomplished musician, has consented to give up part of his time every week to directing the singing that should give the desired practise. One would expect the appreciation of the fellows to be shown at least to the extent of courteous attention and some effort to help in the singing. And yet on his visit last Friday, fully half the fellows who were in the Union continued their conversations, chess games, or card playing without interruption; and even the stirring strains of the "Stein Song" found many who were unwilling to pay to the Institute and to the memory of the Class of 1887, the compliment of rising to join in the singing.

Today Dr. Underhill will be at the Union again between 1.30 and 2, and it is hoped that every undergraduate who can will not only be on hand, but also make an effort to help overcome the weakness which at present characterizes our singing.

Maurice R. Scharff

## DR. GUERTLER SPEAKS

(Continued from page 1.)

combinations possible, the lecturer stated that if 50 elements only were used and were mixed two by two the number of alloys resulting and differing from each other by more than five per cent would exceed 50,000. If these elements were mixed by threes, millions and millions of alloys would be obtained.

A man can not find any real useful alloy by helter-skelter mixing. To obtain desired results a man must well understand mineralogy, geology and metallography.

Dr. Guertler defined an alloy as an amorphous matter, a mixture of crystals. All metals are crystallized and all alloys are crystallized mixtures. It is possible however to obtain two liquids which will not mix, analogous to oil and water. This is quite often the case, aluminium, and sodium for instance will not alloy, the sodium remaining at the top and the aluminium at the bottom of the mixture. In the case of lead and zinc each metal takes part of the other but no true alloy results. Thallium, lead and bismuth will not mix.

All metals in crystallizing follow the natural laws of crystallization of salts. The natural alloys, as meteorites, form very slowly in big crystals, of nickel and iron principally. Dr. Guertler showed several interesting slides on crystallization and methods, illustrating the forms of crystals and the surrounding eutectic or solid solution.

The great result that modern research has accomplished for the production of alloys is that now there are well defined rules and a scientific basis to go by. In mixing metals a man can tell with reasonable certainty what will happen. Heretofore the process has been more or less a matter of experimentation, usually unsatisfactory.

A projecting microscope of great enlarging powers was used to show the various forms of metallic crystallization.

STONE & WEBSTER
CHARLES A. STONE, '88 EDWIN S. WEBSTER, '88
RUSSELL ROBB, '88 HENRY G. BRADLEE, '91
147 MILK STREET, BOSTON, MASSACHUSETTS

OTIS ELEVATOR COMPANY
53 State Street, BOSTON
Electric and Hydraulic Elevators
ESCALATORS (Moving Stairways)

MAKER TO WEARER
THE SPHINX $2.00 HAT
412 WASHINGTON ST. BOSTON
FALL STYLES

"THE LITTLE PLACE 'ROUND THE CORNER"
COPLEY LUNCH
QUICK SERVICE

T. J. SOUTHWELL
Stationer and Newsdealer
Circulating Library Laundry Agency
Ladies' and Gentlemen's Furnishings
66 HUNTINGTON AVENUE, BOSTON
Near cor. of Irvington Street

THE STUDENT'S DRUG STORE
UNDER COPLEY SQUARE HOTEL
We make a special effort to merit the patronage of our student friends . . . . . .
Don't forget the address, under Copley Sq. Hotel

M. J. HANNIGAN
formerly of Hotel Lenox has leased The Tech Barber Shop, Hotel Westminster. Special attention paid to students. All Haircuts 25c.

HERRICK TICKETS ALL THEATRES
COPLEY SQUARE
Telephones 2329, 2330 and 2331 Back Bay

McMORROW
College Shoes for College Men
238 Washington Street, Boston, Mass.
OPPOSITE YOUNG'S HOTEL

"THE GIRLS ARE FOND OF THESE"

Tech Emblems
Greatest Variety
Lowest Prices
BENT & BUSH
15 SCHOOL ST. BOSTON, MASS.

GEO. H. ELLIS CO
Printers
No. 272 CONGRESS STREET
BOSTON, MASS.
Phone, 1549

MORSE & HENDERSON
Tailors
18 BOYLSTON STREET
Rooms 14-15
Telephone Oxford 99 BOSTON
SPECIAL DISCOUNT TO TECH MEN

HIGGINS'
Drawing-Inks
Eternal Writing-Ink
Engrossing-Ink
Taurine Mucilage
Photo-Mounter
Drawing-Board Paste
Liquid Paste
Office Paste
Vegetable Glue, Etc.

*Are the Finest and Best Inks and Adhesives.* Emancipate yourself from the use of corrosive and ill-smelling inks and adhesives and adopt the *Higgins Inks and Adhesives.* They will be a revelation to you, they are so sweet, clean, and well put up.
*At Dealers Generally.*
CHAS. M. HIGGINS & CO., Mfgrs.
Branches: Chicago, London
271 Ninth Street, Brooklyn, N.Y

ARTISTS PROOFS
PHOTOGRAPHER
Marceau
VELLUM PHOTOGRAPHS
160 TREMONT ST.
BOSTON
NEAR KEITH'S
TECHNOLOGY PHOTOGRAPHERS FOR 1909

# HALL & HANCOCK Co

## Hats and Furs

THE STANDARD OF STYLE AND EXCELLENCE

420 WASHINGTON ST.

## STATIONERY

FRATERNITY STATIONERY

ENGRAVED INVITATIONS

RECEPTION AND VISITING CARDS

BANQUET MENUS

COATS OF ARMS, CRESTS & MONOGRAMS

STUDENT'S SUPPLIES

WARD'S SAMUEL WARD CO. 51 63 Franklin St., BOSTON

Huyler's

Candies
Soda

146 TREMONT ST.
414 BOYLSTON ST.
139 SUMMER ST.

CHAMBERLAIN HATS SHIRTS and NECK WEAR

SPRING STYLES IN OUR

ROYAL LUXURY $4.00 DERBY

BEACONSFIELD $3.00 DERBY

REVELATION $2.00 DERBY

659 Washington St., Under Gaiety Theatre
637 Washington St., Corner of Boylston

## The Technology Review

A QUARTERLY MAGAZINE

DEVOTED TO THE INTERESTS OF

THE MASSACHUSETTS INSTITUTE

OF TECHNOLOGY

AND

PUBLISHED BY THE ALUMNI

ASSOCIATION

83 NEWBURY STREET, BOSTON

The Review aims to develop closer relations among Institute men and to stimulate their interest in the work of the College. It is in no sense an engineering magazine, but deals broadly with the problems of Technological Education and the responsibilities of the professional man.

*THE REVIEW is published during January, April, July, and October. Communications should be addressed to The TECHNOLOGY REVIEW, 83 Newbury St., Boston*

SUBSCRIPTION, TWO DOLLARS A YEAR

SINGLE COPIES, FIFTY CENTS


The fourth excursion of the Electrical Engineering Society will be made to the works of the General Electric Company at West Lynn, Mass., on three afternoons of next week,—Monday, Wednesday, and Friday, March 1, 3, and 5. As the opportunity is an unusual one, it is expected that a large number of the members will take advantage of this chance to see one of the largest and best equipped electrical manufacturing plants in the country. As it will take several hours to go through the plant itself, the start will be made earlier than usual. The parties will leave on the ferry boat of the Boston, Revere Beach, and Lynn Railroad at Rowe's Wharf, at 1.50 P. M., on March 1, 3, and 5. Members are requested to buy their own tickets for West Lynn. Lists are posted on the Society bulletin board in Lowell Building for the signatures of those who intend to go. Parties are limited to thirty men. Round trip from Rowe's Wharf, twenty cents.

## NOTICES

The Musical Clubs will have an important meeting today at 4.15. All men must be there.

WAITERS—Position open for an assistant head waiter at the Union Dining Room. See steward for particulars.

1911 CROSS COUNTRY—The squad will leave the Gym at 3 P. M. Saturday.

1910 NOTICE—The class picture, with the list of names which will be published in Technique, will be posted on the bulletin board at the Union Friday and Saturday. Every one who was in the picture is requested to see the list and to make any necessary insertions and corrections.

At the Y. M. C. A. meeting Sunday night in the Union Daniel S. Gate, the General Secretary of the Technology Association two years ago, will be the speaker.

1912—Class meeting Huntington Hall, 1.00 o'clock. Important.

Subscriptions to the Tech for the remainder of the year for sale at the Tech office, 30 C. Price, $1.00.

## CLASSIFIED ADS

Advertisements under this head are inserted at the rate of five cents a line of six words, payable in advance, and copy should be handed to the business manager the morning before publication day.

LOST.—Feb. 20. A green book bag, containing note book. Pease eave at Cage for Perrine.

TO RENT—Small steam heated room with gas on upper floor, $1.50 per week. Apply at Suite two, 163 Huntington Ave.

WANTED—A student's desk at once. Leave note at cage for E. M. Mason.

FOUND—A fountain pen in the Electrical Laboratory and a watch. Inquire at the Bursar's office.

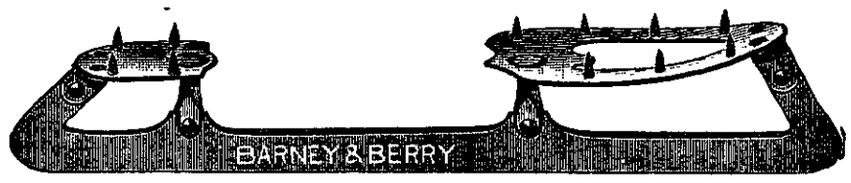
LOST—In 20A Wednesday, Berry's Temperature Entropy Diagrams. Please leave at cage.

TO LET.—Light, cozy front room with modern conveniences. 8 St. Charles St., off Berkeley.

TECHNOLOGY PENNANTS, banners and pillow covers. Leave note for E. Q. Adams, "Cage."


BARNEY & BERRY'S

CANADIAN HOCKEY




is the equipment of most first class Hockey Players and is second to no skate on the market for Quality, Finish, and Temper. Every skate guaranteed. This ought to interest the "Tech" readers. We have a line of strictly high grade Skating Shoes to which we attach these skates, as well as others of our line. Send for our Catalog with price list of Shoes with skates attached. Your dealer will supply you.

BARNEY & BERRY

214 BROAD STREET, SPRINGFIELD, MASS.

MEN'S HATS

FUR COATS

Hat and outer coat "make the man" as the public sees him in Winter. Then there's comfort. Two good reasons you should buy here. If you're a "Tech" man here's another.

10 PER CENT OFF TO TECHNOLOGY STUDENTS

A. N. COOK & CO., 161 Tremont St., Boston, U. S. A.

HOTEL BRUNSWICK BOSTON

EUROPEAN AND AMERICAN PLANS

HERBERT H. BARNES, Proprietor

C. A. PATTEN & CO.

Merchant Tailors

Carney Bldg., 43 Tremont St., Boston

SUITS DROPPED

To close out our ends of $32 —35 Suitings; we will make your choice at $25 to $28.

All Goods Required by Students at

Maclachlan's

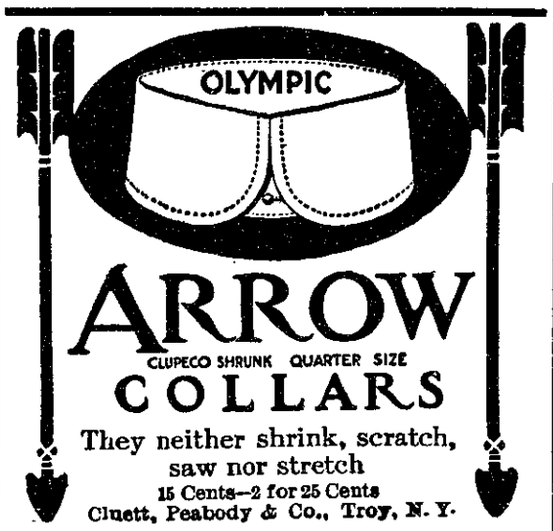
502 Boylston St.

Drawing Instruments and Materials, etc.
Fountain Pens, Text-books

College Clothes

Many new and exclusive styles for young men, hand tailored by the best craftsmen.

A. SHUMAN & CO.
BOSTON




ARROW

CLUPECO SHRUNK QUARTER SIZE

COLLARS

They neither shrink, scratch, saw nor stretch

15 Cents—2 for 25 Cents

Cluett, Peabody & Co., Troy, N. Y.

ROWAN & CURRY

"The Tech Barbers"

FORMERLY IN THE WESTMINSTER HOTEL

Now opened in the new Chauncey Hall Building on Boylston St. opp. Copley Sq.

PHONE, 21761 BACK BAY

HEWETT'S LUNCH FOR LADIES AND GENTLEMEN

OPENED FROM 6 A.M. TO 12 P.M.

ALL HOME MADE PASTRY

196 Dartmouth St, Boston, Mass.

REBUILT TYPEWRITERS

In Serviceability
In Appearance
In all Requisites

LIKE NEW

Latest Models, slightly used
of all the standard makes
at fraction of original price

We rent splendid Typewriters
at very low rates. as low as $1.00 and
six months rental applied to purchase.

ADDRESS

GENERAL TYPEWRITER EXCHANGE

21 Murray Street, - NEW YORK